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SHAPING NUCLEAR WASTE POLICY AT THE JUNCTURE OF FEDERAL AND STATE LAW

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Abstract: Nuclear waste has long been the Achilles' heel of the civilian nuclear power industry. The spent nuclear fuel that reactors generate remains radioactive for hundreds of thousands of years, however, all the spent fuel that has been generated to date is stored in temporary, short-term facilities. As the federal government struggles to develop a permanent solution, many temporary storage facilities are nearing capacity. A few states in which civilian reactors are located have placed severe constraints on the construction of additional needed storage, potentially causing the shutdown of the federally-licensed reactors. In part because of this pressure from the states, Congress has sought to create a federal, centralized interim storage facility while development of a permanent repository proceeds. This controversial effort has yet to succeed. This note will suggest that a new approach to the interim storage problem is necessary—one that involves granting the federal government exclusive authority over nuclear waste storage facilities.

[W]here a specific duty is assigned by law, and individual rights depend upon the performance of that duty . . . the individual who considers himself injured, has a right to resort to the laws of his country for a [remedy].

—*Marbury v. Madison*¹

INTRODUCTION

On January 31, 1997, several electric utilities operating commercial nuclear reactors petitioned the United States Court of Appeals for the D.C. Circuit for a writ of mandamus to require the federal government to begin accepting highly radioactive spent nuclear fuel from the utilities by a statutory deadline the following January.² Congress set this deadline fifteen years earlier by enacting the Nuclear

* Note Editor, BOSTON COLLEGE ENVIRONMENTAL AFFAIRS LAW REVIEW, 2000-01. The author wishes to thank his brother, Alex, for his help in framing the issues in this Note.

¹ 5 U.S. (1 Cranch) 137, 166 (1803).

² See *N. States Power Co. v. United States Dep't of Energy*, 128 F.3d 754, 755 (D.C. Cir. 1997) [hereinafter *Northern States Power I*].

Waste Policy Act (NWPAct) under the presumption that by January 1, 1998 the government would have someplace to safely dispose of the waste.³ By 1997, there was no such safe place, and the government had made clear that it would not begin accepting the waste by the deadline—rather the waste would remain in temporary storage at the reactor sites where it was generated.⁴

The utilities filing the petition had already gone before the D.C. Circuit two years earlier to seek a ruling on the extent of the government's obligations under the NWPAct.⁵ In that case, *Indiana Michigan v. Department of Energy*, the D.C. Circuit ruled that the government had an unconditional obligation to accept waste by January 1, 1998.⁶ Without seeking a rehearing of that ruling, or petitioning the Supreme Court for certiorari, the government nonetheless informed utilities that it would not accept waste by the deadline.⁷ Facing growing stores of nuclear waste and limited storage space in which to place it, the utilities responded by filing a suit requesting a writ of mandamus to force the government to honor its obligations under the NWPAct.⁸

A writ of mandamus is proper only if (1) the plaintiff has a clear right to relief; (2) the defendant has a clear duty to act; and (3) there is no other adequate remedy available to the plaintiff.⁹ Reiterating the holding of *Indiana Michigan*,¹⁰ the D.C. Circuit Court found that the utilities had established a clear right to relief, and that the government had a clear duty to act.¹¹ The court also found, however, that

³ See Michael A. Bauser, *Recent Decisions Concerning DOE's Commercial Radioactive Waste Disposal Program*, 19 ENERGY L.J. 387, 387 (1998).

⁴ See Final Interpretation of Nuclear Waste Acceptance Issues, 60 Fed. Reg. 21,793, 21,793-94 (1995). Department of Energy (DOE) stated that it would not be able to begin taking spent nuclear fuel from utilities by Jan. 1, 1998, and that it did not have an obligation to begin accepting waste by the deadline absent a permanent waste repository or interim storage facility constructed under the NWPAct. See *id.*

⁵ See *Ind. Mich. Power Co. v. Dep't of Energy*, 88 F.3d 1272, 1273 (D.C. Cir. 1996).

⁶ See *id.* at 1277.

⁷ See *Northern States Power I*, 128 F.3d at 756-57.

⁸ See *id.*

⁹ *Id.* at 758.

¹⁰ See *Ind. Mich.*, 88 F.3d at 1277.

¹¹ See *Northern States Power I*, 128 F.3d at 758. The D.C. Circuit held in *Indiana Michigan* that the DOE had an obligation to meet the 1998 deadline, without qualification or condition, in return for payments made by the utilities into the Nuclear Waste Fund. The utilities had dutifully paid several billion dollars into the Nuclear Waste Fund, binding DOE to its contractual bargain, and therefore DOE had a clear duty to act. See 88 F.3d at 1276. Following the ruling in *Indiana Michigan*, DOE nonetheless informed the utilities that it

there were, in fact, other adequate remedies available to the plaintiffs and therefore did not issue the broad writ requested by the utilities.¹² Four years after the court's ruling and over two years after the January 31, 1998 statutory deadline has come and gone, a final remedy remains unclear.¹³

Ten utilities have suits pending against the Department of Energy (DOE) in Federal Claims Court for damages totaling \$8.5 billion,¹⁴ with total liability projected to reach as much as \$40 to \$80 billion.¹⁵ Further complicating the matter, several utilities with pressing storage needs are limited by state regulations in the amount of waste the utilities can store on-site at their reactors.¹⁶ If the federal government does not begin meeting its obligations under the NWPA, some reactors may have to be prematurely shut down.¹⁷ Utilities are finding themselves stuck at the friction point between the federal government's delay and state governments' impatience.¹⁸

In response to massive potential legal liability, and dwindling temporary storage space for spent nuclear fuel, all sides have sought a legislative remedy.¹⁹ The magnitude and complexity of the spent nuclear fuel problem, and the need for a comprehensive, coherent national policy suggests that Congress is best equipped to provide a remedy.²⁰ Several bills have been introduced during the last two Con-

would be unable to accept waste by the deadline, providing the utilities with clear right to relief. See *Northern States Power I*, 128 F.3d at 757.

¹² See *id.* at 759. The NWPA mandated that utilities generating spent nuclear fuel enter into a "Standard Contract," to be discussed below, with DOE for the disposal of the spent fuel. See 42 U.S.C. § 10222(a) (1999). The D.C. Circuit Court found that the contract provides a potentially adequate remedy in the event one of the parties fails to meet their contractual obligation—essentially administrative relief negotiated through DOE's contracting officer. See *Northern States Power I*, 128 F.3d at 756.

¹³ See Bauser, *supra* note 3, at 394–95.

¹⁴ See *Nuclear Waste Policy Act of 1999: Hearing on H.R. 45 Before the Subcomm. on Energy and Power of the House Commerce Comm.*, 106th Cong. (1999) [hereinafter Feb. 10, 1999 House NWPA Hearing] (statement of Stuart Schiffer, Deputy Assistant Attorney General, United States Dept. of Justice) available at 1999 WL 72647.

¹⁵ See *Nuclear Waste Policy Act of 1999: Hearing on S. 608 Before the Senate Comm. on Energy and Natural Resources*, 106th Cong. (1999) (statement of Chairman Frank Murkowski).

¹⁶ See Margaret Kriz, *Mountain of Trouble*, 31 NAT'L J. 2545, 2543 (1999).

¹⁷ See *id.*

¹⁸ See *id.*

¹⁹ See *id.* See also *Hearing on H.R. 45, the Nuclear Waste Policy Act of 1999 Before the Subcomm. on Energy and Power of the House Commerce Comm.*, 106th Cong. (1999) [hereinafter Mar. 12, 1999 House NWPA Hearing] (statement of Sec'y Bill Richardson, DOE) available at 1999 WL 140816.

²⁰ See Rep. Fred Upton, *How Should Waste Be Stored? Move Waste to a Safe, Central Site*, ROLL CALL, Mar. 6, 2000, available at 2000 WL 8733826.

gresses, generally focused on providing federal interim storage for spent nuclear fuel or having the government take title to, and financial responsibility for, the waste where it currently sits.²¹ After analyzing the legal history of the issue, however, this Comment will suggest that ultimately neither of these legislative fixes will proceed. The likely resolution will instead involve both the award of damages to utilities and new legislation giving the federal government exclusive regulatory authority over spent nuclear fuel, thereby eliminating state limits on on-site storage capacity.

I. HISTORY OF THE NUCLEAR WASTE POLICY ACT OF 1982

A. The "One-Time-Through" Fuel Cycle

The federal government first permitted the private use and ownership of nuclear facilities in 1954.²² At that time, Congress enacted the Atomic Energy Act of 1954 establishing a legal regime governing the production of nuclear energy.²³ Under this system, the disposal of the high-level radioactive waste that results from nuclear fission²⁴ became the responsibility of the federal government.²⁵ Federal policy has always been based on the premise that nuclear waste can be disposed of safely.²⁶ Despite this optimistic position, health and environmental concerns have led to controversy and delay in the development and siting of disposal facilities.²⁷

Up until the late 1970s, one possible solution was to recycle the spent nuclear fuel.²⁸ The fission reaction that occurs within a commercial reactor burns up only a small percentage of the fuel's energy, leaving behind highly radioactive waste, within which remains

²¹ See H.R. 45, 106th Cong. (1999); S. 608, 106th Cong. (1999); S. 1287, 106th Cong. (1999).

²² See Bauser, *supra* note 3, at 387.

²³ See *id.*

²⁴ In a nuclear power plant, the fuel produces heat by the process of fission. See Bauser, *supra* note 3, at 387 n.1. This process creates radiation, and when the spent fuel is removed it remains highly radioactive. See *id.*

²⁵ See *id.* at 387.

²⁶ See Mark Holt, *Civilian Nuclear Waste Disposal*, 1, 1 (last modified May 24, 2000) <<http://www.cnle.org/nle/waste-2.html>> (Congressional Research Serv. Issue Brief for Congress No. 92059).

²⁷ See *id.*

²⁸ See Mark Holt, *Civilian Nuclear Spent Fuel Temporary Storage Options*, 1, 3 (last modified Mar. 27, 1998) <<http://www.cnle.org/nle/waste-20.html>> (Congressional Research Serv. Issue Brief for Congress No. 96-212 ENR).

significant potential energy.²⁹ Early on in the development of the nuclear power industry, the remaining energy in the waste was viewed as a valuable potential resource.³⁰ In European countries, such as the United Kingdom, the spent nuclear fuel from commercial reactors has been recycled, removing the energy-depleted material from the spent fuel, then reprocessing what remains for use in reactors.³¹

This type of fuel cycle significantly reduces the total waste stream from fission reactors; however, it results in the isolation of plutonium—a potential nuclear weapons proliferation risk.³² For this reason, in 1977 President Carter signed an executive order prohibiting the recycling of fuel for commercial reactors.³³ Although this order was repealed by President Reagan, the Carter precedent has prevailed, and consequently, all commercial reactors in the United States today employ a “one-time-through” fuel cycle.³⁴ As a result, spent nuclear fuel, once removed from the reactors, is stored in on-site temporary storage.³⁵ Ironically, because all of the commercial nuclear reactors operating in the United States were designed when the policy of the United States policy was geared towards reprocessing the spent fuel, on-site storage facilities are relatively small.³⁶

Northern States Power, the lead utility plaintiff in the suit seeking a writ of mandamus against DOE,³⁷ faces a particularly dire storage situation.³⁸ It designed its spent fuel facilities for short-term storage with the understanding that the federal government would reprocess

²⁹ See *id.*

³⁰ See *id.*

³¹ See *id.* at 8. In the United Kingdom, British Nuclear Fuels Ltd. has recently opened a commercial reprocessing plant in Sellafield, England, which was developed with the intention of reprocessing spent fuel from throughout Europe, Japan, and possibly the United States. See *id.*

³² See Jason Hardin, Note, *Tipping the Scales: Why Congress and the President Should Create a Federal Interim Storage Facility for High-Level Radioactive Waste*, 19 J. LAND RESOURCES & ENVTL. L. 293, 294 (1999).

³³ See *id.*

³⁴ See *id.*

³⁵ See Denise Renee Foster, Comment, *Utilities: De Facto Repositories for High-Level Nuclear Waste?* 5 DICK. J. ENVTL. L. & POL'Y 375, 375 (1996). The nuclear fuel assemblies, once removed from the reactor core, are placed underwater to both cool the spent fuel and provide radiation shielding. See *id.* at 389 n.93. This technique of storage is safe and relatively stable. Considering, however, that the spent nuclear fuel must be isolated from the environment for hundreds of thousands of years, on-site storage ponds clearly only offer a temporary solution to the waste problem. See *id.*

³⁶ Holt, *supra* note 28, at 3.

³⁷ See *Norther States Power I*, 128 F.3d 754, 754 (D.C. Cir. 1997).

³⁸ See Kriz, *supra* note 16, at 2543.

the fuel or provide for permanent disposal.³⁹ The utility did not anticipate the need to provide long-term storage of its spent fuel, so it does not have large amounts of storage space, and thus it is quickly running out of room.⁴⁰ Complicating matters further, the State of Minnesota, where Northern States Power is located, passed a law in 1986 requiring any entity seeking to construct a radioactive waste management facility in the state to get express authorization to do so from the Minnesota legislature.⁴¹

This law had been passed with the intent of preventing DOE from locating a permanent nuclear waste repository in Minnesota.⁴² One early proposal for disposing of the nation's nuclear waste had been to bury it under a granite formation underlying the state.⁴³ That plan was scrapped, but the Minnesota law resurfaced in a related context when, in 1993, Northern States Power sought approval from the Minnesota Public Utilities Commission to expand on-site storage at its Prairie Island Plant.⁴⁴ The Commission approved the plan, but it was successfully challenged in the Minnesota Court of Appeals, and Northern States Power had to seek legislative approval for its expansion plan.⁴⁵

Approval was granted by the legislature in 1994, but only for enough additional storage space to last through 2002, and at a substantial cost to the utility.⁴⁶ When, in 1998, Northern States Power again sought approval to store more spent fuel on-site, the company was granted permission to do so by the Minnesota Public Utilities Commission.⁴⁷ That decision was appealed, however, and in the resulting suit the appeals court squarely placed the blame for the resulting legal mess on the federal government.⁴⁸ "The history of this case can be traced to the failure of Congress and the federal government to

³⁹ See Holt, *supra* note 28.

⁴⁰ See Kriz, *supra* note 16, at 2543.

⁴¹ See *In re Application for a Certificate of Need for Const. of an Indep. Spent Fuel Storage Installation*, 501 N.W.2d 638, 642 (Minn. Ct. App. 1993).

⁴² See Holt, *supra* note 28.

⁴³ See Dean Rebuffoni, *Minnesota May Be Considered as Nuclear-Waste Repository*, MINNEAPOLIS STAR-TRIBUNE, Jan. 9, 1986, 1986 WL 4804104.

⁴⁴ See *In re Application for a Certificate of Need*, 501 N.W.2d at 640-43, 649.

⁴⁵ See *id.*

⁴⁶ See Kriz, *supra* note 16, at 2543. The Minnesota Legislature, as a condition to approving Northern States Power's plan, required the utility to make payments into a renewable energy fund. See *id.* By Jan. 2000, the utility had paid \$3.5 million into the fund. See *id.*

⁴⁷ See *In re Application of Northern States Power Co. for Approval of Its 1998 Resource Plan*, 604 N.W.2d 386, 388 (Minn. Ct. App. 2000).

⁴⁸ See *id.* at 387.

fulfill a compact to construct and, in 1998, to begin receiving high-level nuclear waste generated by the country's nuclear power plants."⁴⁹ The decision of the Commission was upheld in that case, allowing Northern States Power to store additional waste in the company's existing storage pools, but that provided only a temporary respite for the utility.⁵⁰

B. Nuclear Waste Policy Act of 1982

In response to the accumulation of spent nuclear fuel at commercial reactors, Congress passed the Nuclear Waste Policy Act of 1982.⁵¹ When Congress did this, it acknowledged that the federal government's efforts to devise a permanent solution to the problem of civilian radioactive waste disposal had not been adequate.⁵² Further, the government had the responsibility to provide a permanent disposal solution.⁵³ Prior to the creation of a permanent disposal site, the NWPA assigned responsibility for interim storage to the utilities generating spent nuclear fuel.⁵⁴ Interim storage prior to the creation of a permanent disposal site was made the responsibility of the utilities generating spent nuclear fuel.⁵⁵ Furthermore, utilities were obligated to pay into the Nuclear Waste Fund to cover the costs of disposal.⁵⁶ In return, the federal government, through DOE, was obligated to take and dispose of the spent nuclear fuel in a permanent geologic repository beginning on January 31, 1998.⁵⁷

The NWPA required utilities to enter into a Standard Contract containing the following provisions:⁵⁸

following the commencement of operation of a repository, the Secretary shall take title to the high-level radioactive waste or spent nuclear fuel involved as expeditiously as prac-

⁴⁹ *Id.*

⁵⁰ *See id.* at 391. Northern States Power will completely run out of space for the storage of spent fuel by 2007 unless it is able to build new, additional storage facilities. *See* Kriz, *supra* note 16, at 2543.

⁵¹ *See* 42 U.S.C. §§ 10101–10270 (1999).

⁵² *See* 42 U.S.C. § 10131(a)(3)–(4).

⁵³ *See id.*

⁵⁴ *Ind. Mich. Power Co. v. Dep't of Energy*, 88 F.3d 1272, 1273 (D.C. Cir. 1996).

⁵⁵ *See* Bauser, *supra* note 3, at 387.

⁵⁶ *See id.* at 388.

⁵⁷ *See id.*

⁵⁸ *Ind. Mich. Power*, 88 F.3d at 1273.

licable upon the request of the generator owner of such waste or spent fuel; and
in return for payment of fees established by this section, the Secretary, *beginning not later than January 31, 1998*, will dispose of the high-level radioactive waste or spent nuclear fuel involved as provided in this subchapter.⁵⁹

Beginning in 1983, utilities entered into these standard contracts with DOE as directed by the NWP. ⁶⁰ The utilities were obligated to pay into the Nuclear Waste Fund a fixed annual fee of a tenth of a cent (one mil) per kilowatt-hour of electricity that their nuclear reactors generated.⁶¹ Congress then made annual appropriations from the fund to DOE for development of a repository.⁶² By September of 1999, the fund had collected over \$15 billion from utilities.⁶³

C. *Yucca Mountain Repository*

In 1987, Congress limited the sites under consideration by DOE for a geologic repository to Yucca Mountain in Nevada.⁶⁴ In general, the safe geologic disposal of nuclear waste appears technically feasible because, although the waste must remain isolated from the environment for many thousands of years, many geologic formations are believed to remain undisturbed for millions of years.⁶⁵ According to the National Research Council, "[t]here is no scientific or technical reason to think that a satisfactory geological repository cannot be built."⁶⁶ The Yucca Mountain project has remained extremely controversial, however, in large part because it is extraordinarily difficult to predict the integrity of the repository over a period of 10,000 years, as is required by the NWP.⁶⁷ The State of Nevada has vigorously op-

⁵⁹ 42 U.S.C. § 10222(a)(5)(A)–(B) (emphasis added).

⁶⁰ *See id.*

⁶¹ *See* 42 U.S.C. § 10222(a)(2).

⁶² *See* Holt, *supra* note 26, at 7.

⁶³ *See* Kriz, *supra* note 16, at 2543.

⁶⁴ *See* Holt, *supra* note 26, at 3.

⁶⁵ *See id.*

⁶⁶ *Id.*

⁶⁷ *See id.* In an interview with a senior Senate staff member who has worked extensively on the issue, it was suggested to the author that the NWP was something of a white elephant for the civilian nuclear power industry. Unlike all other forms of electricity generation, nuclear power has a "closed" fuel cycle—the waste generated cannot be dispersed into the common via a smokestack or other method. The waste *must* be disposed of or recycled in some manner, and thus, if the fuel cycle cannot be closed, the industry cannot continue to operate. While ostensibly the NWP provides for disposal and limits the indus-

posed the site because of concerns about earthquakes in the area and groundwater contamination.⁶⁸

Significant delays from the original schedule imposed by the NWPA have resulted from the scientific uncertainty involved in testing of the site, as well as poor program management and, DOE contends, funding shortfalls in Congress' appropriations.⁶⁹ Following years of exploratory studies at the site, the initial "viability assessment" for Yucca Mountain was issued by DOE on December 18, 1998, over ten months after the depository was supposed to begin accepting waste.⁷⁰ Although the Draft Environmental Impact Statement, completed in July 1999, recommended proceeding with the project, the planned repository is not scheduled to open until 2010 at the earliest.⁷¹ DOE Secretary Bill Richardson has stated that although no technical "showstoppers" have been discovered, uncertainties remain.⁷² A final Environmental Impact Statement (EIS) is due to be completed this year (2000).⁷³ If this evaluation finds the site to be suitable, DOE must then get presidential approval to apply to the Nuclear Regulatory Agency for a construction permit and operating license.⁷⁴ Many hurdles remain to be cleared before the site is ready to accept spent fuel, and although DOE believes that it is on track to begin operating the repository in 2010, the variables involved are significant.⁷⁵

When it became clear to DOE in 1995 that the Yucca Mountain project would not be ready by the January 31, 1998, deadline, DOE issued a notice to utilities that it would not begin to accept spent nuclear fuel by that date.⁷⁶ The Agency concluded that it did not have an unconditional statutory or contractual obligation to accept spent fuel in the absence of a repository or interim storage facility.⁷⁷ As a result

try's liability for the radioactive waste it generates, it was suggested that because the NWPA requires site performance standards to be accurately predicted for 10,000 years and beyond—an inherently uncertain endeavor—site evaluation would take so long that the civilian nuclear power industry would in the meantime be forced out of business.

⁶⁸ See Holt, *supra* note 26, at 3–4.

⁶⁹ See *id.* at 3–4. Although the Nuclear Waste Fund is amply funded, DOE cannot spend the waste fees without Congressional approval, and only about half the fees collected have been appropriated. *Id.*

⁷⁰ See *id.* at 3.

⁷¹ See *id.*

⁷² See Mar. 12, 1999 House NWPA Hearing, *supra* note 19.

⁷³ See Holt, *supra* note 26, at 10.

⁷⁴ See *id.*

⁷⁵ See *id.*

⁷⁶ See *Ind. Mich. Power Co. v. Dep't of Energy*, 88 F.3d 1272, 1274 (D.C. Cir 1996).

⁷⁷ See *id.*

of these findings by DOE, several utilities brought suit against the Agency.⁷⁸

II. THE LITIGATION OF THE NWPA

A. *Indiana Michigan Power Co. v. DOE*

The first suit brought against DOE regarding the Agency's obligations under the NWPA was *Indiana Michigan Power Co. v. DOE*.⁷⁹ In that case, several utilities and state commissions that paid fees into the Nuclear Waste Fund sought review of DOE's 1995 order declaring that the Agency was not obligated to dispose of high-level waste in the absence of an operational repository.⁸⁰

DOE based its view of its statutory and contractual obligations, or lack thereof, upon an Agency construction of the NWPA.⁸¹ In reviewing an Agency's construction of a statute entrusted to its administration, the court followed the two-step statutory analysis established in *Chevron U.S.A. v. Natural Resources Defense Council*.⁸² The *Chevron* analysis involves asking first whether Congress has spoken unambiguously to the question at hand.⁸³ If Congress has spoken unambiguously, the court must "follow that language and give it effect."⁸⁴ If not, the court will defer to the Agency's interpretation if it is reasonable and consistent with the statute's purpose.⁸⁵

DOE contended that if the NWPA was examined as a whole, the only interpretation possible was that its acceptance of nuclear waste was not determined solely by the passage of the January 31, 1998 deadline, but was further conditioned upon the availability of a repository.⁸⁶ Section 302(a)(5)(B) of the NWPA states that "in return for the payment of fees . . . [DOE], beginning not later than January 31, 1998, will dispose of [spent nuclear fuel]. . . ."⁸⁷ DOE contended that in order to "dispose," a repository must first exist, and therefore,

⁷⁸ See *id.*

⁷⁹ See *id.*

⁸⁰ See *id.* at 1273.

⁸¹ See *Ind. Mich. Power*, 88 F.3d at 1274.

⁸² See *id.*; see also *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 842-43 (1984).

⁸³ See *Ind. Mich. Power*, 88 F.3d at 1274.

⁸⁴ See *id.* (quoting *Wis. Elec. Power v. DOE*, 778 F.2d 1, 4 (D.C. Cir. 1985)).

⁸⁵ See *id.*

⁸⁶ See *id.*

⁸⁷ Nuclear Waste Policy Act, 42 U.S.C. § 10222(a)(5)(B).

the Agency's obligation under the statute was conditioned upon such a repository being completed.⁸⁸

The D.C. Circuit Court found that Congress had spoken unambiguously to the question at hand, and that DOE's interpretation of the NWPA was contrary to Congress' clear intent.⁸⁹ Therefore, the Agency's construction of the statute did not survive the first step of the *Chevron* analysis.⁹⁰ The court found that the statute made DOE's obligation to accept and take title to the waste existed independent of the availability of a permanent repository.⁹¹ Furthermore, the language of the Standard Contract that the utilities were obligated by the NWPA to enter into with DOE strengthened the court's interpretation.⁹² In the contract, the only limitation placed upon DOE's obligation to accept waste by January 31, 1998 was that the obligation was made in return for the utilities' payment of fees into the Nuclear Waste Fund.⁹³ Noting that DOE's interpretation implied that the payment of fees by the utilities was for nothing, the court compared the Agency's argument to the Yiddish saying "Here is air; give me money."⁹⁴

In sum, the court found that "[t]he Department's treatment of this statute is not an interpretation but a rewrite. It not only blue-pencils out the phrase 'not later than January 31, 1998,' but destroys the quid pro quo created by Congress."⁹⁵ The absence of a repository did not relieve DOE of its statutory obligation under the NWPA; it merely limited the remedies available to the court.⁹⁶ Because the deadline had not passed at the time of the decision, the court remanded the case to the Agency and held that DOE had an unconditional obligation to accept waste by the deadline.⁹⁷

⁸⁸ See *Ind. Mich. Power*, 88 F.3d at 1275.

⁸⁹ See *id.*

⁹⁰ See *id.*

⁹¹ See *id.*

⁹² See *id.* at 1276.

⁹³ See *Ind. Mich. Power*, 88 F.3d at 1276.

⁹⁴ *Id.*

⁹⁵ *Id.*

⁹⁶ See *id.* at 1277.

⁹⁷ See *id.*

B. Northern States Power Company, et al., v. United States Department of Energy

Notwithstanding the court's holding, DOE did not change its course of action and announced it would be unable to begin accepting spent nuclear fuel by January 31, 1998.⁹⁸ One year prior to the deadline, on January 31, 1997, several utilities filed suit seeking a writ of mandamus to compel DOE compliance with the *Indiana Michigan Power* decision.⁹⁹ While the case, *Northern States Power v. United States DOE*, was pending, DOE acknowledged on June 27, 1997 that it had an obligation to accept waste by the deadline.¹⁰⁰ DOE further stated, however, that the Standard Contract provided for remedies in case of non-compliance, and that DOE was not obligated to provide a financial remedy for the delay because the delay was "unavoidable."¹⁰¹ In essence, DOE acknowledged it had an obligation, but that the obligation created no liability.¹⁰²

The court in *Northern States Power v. United States DOE* did not issue a broad writ of mandamus forcing DOE to accept waste by the deadline.¹⁰³ This was because although the petitioners had a clear right to relief and DOE had a clear duty to act, other remedies were available under the Standard Contract.¹⁰⁴ The court did find, however, that a more limited writ was required.¹⁰⁵ DOE was in effect ignoring the ruling in *Indiana Michigan Power*¹⁰⁶ by claiming that the Agency's delay carried with it no liability.¹⁰⁷ Therefore, the court issued a writ of mandamus precluding DOE from finding that its delay was unavoidable—and thus non-recompensable—on the ground that it had not yet prepared a permanent repository.¹⁰⁸ Otherwise, under DOE's interpretation of the contract, the government could always absolve itself from bearing the costs of delay even if the delay was

⁹⁸ See Bauser, *supra* note 3, at 391.

⁹⁹ See *Northern States Power I*, 128 F.3d 754, 759 (D.C. Cir. 1997).

¹⁰⁰ See Bauser, *supra* note 3, at 391.

¹⁰¹ See *id.* at 392.

¹⁰² See *id.*

¹⁰³ See *Northern States Power I*, 128 F.3d at 759. A writ of mandamus is proper only if (1) the plaintiff has a clear right to relief; (2) the defendant has a clear duty to act; and (3) there is no other adequate remedy available to plaintiff. See *id.* at 758.

¹⁰⁴ See *id.* at 758–59.

¹⁰⁵ See *id.* at 759.

¹⁰⁶ 88 F.3d 1272, 1277 (D.C. Cir. 1996).

¹⁰⁷ See *Northern States Power I*, 128 F.3d at 759.

¹⁰⁸ *Id.*

caused by the government's own acts.¹⁰⁹ The effect in sum of this ruling was to deny the utilities' request for specific performance of their contracts with DOE, but it also barred DOE's defense for breach of contract claims.¹¹⁰

C. Federal Claims Court Suits

Subsequent to the decision in *Northern States Power v. United States DOE*, and following the passage of the January 31, 1998 deadline, several utilities brought two separate suits in Federal Claims Court against DOE seeking monetary damages for breach of contract.¹¹¹ In the ruling on the first suit, DOE was ordered, on a motion for summary judgment, to pay damages.¹¹² While the court acknowledged that a provision of the contract between the utilities and DOE mandated that the parties seek administrative relief in the event of delays, the court held that the provision did not automatically bar a court action for additional relief.¹¹³ The final damages associated with DOE liability were left to be determined in further proceedings.¹¹⁴

In a separate suit brought by the plaintiff in the original *Northern States Power v. United States DOE* suit, the Federal Claims Court reached the opposite conclusion.¹¹⁵ The court found that the plaintiff's claim "arose under" the contract and although DOE's anticipated delay of twelve or more years in performing was significant, it did not amount to an actionable breach.¹¹⁶ Therefore, the suit was dismissed and the plaintiff was directed to pursue its claim through the administrative remedies established in the Standard Contract.¹¹⁷ The contract provides that in the event of an unavoidable delay, neither party can be held liable for damages.¹¹⁸ If the delay is deemed avoidable, the contract will be equitably adjusted to reflect any additional cost incurred by the party not responsible for or contributing to the delay.¹¹⁹ A dis-

¹⁰⁹ See *id.*

¹¹⁰ See *id.* at 761.

¹¹¹ See *N. States Power Co. v. United States*, 43 Fed. Cl. 374 (Fed. Cl. 1999) [hereinafter *Northern States Power II*], *Conn. Yankee Atomic Power Co. v. United States*, 42 Fed. Cl. 448 (Fed. Cl. 1998); *Yankee Atomic Elec. Co. v. United States*, 42 Fed. Cl. 223 (Fed. Cl. 1998).

¹¹² See Holt, *supra* note 26, at 4.

¹¹³ See *Yankee Atomic*, 42 Fed. Cl. at 236.

¹¹⁴ See *id.* at 237.

¹¹⁵ See *Northern States II*, 43 Fed. Cl. at 388.

¹¹⁶ See *id.*

¹¹⁷ See *id.*

¹¹⁸ See *id.* at 377.

¹¹⁹ See *id.*

pute arising under the contract as to whether a delay is avoidable or unavoidable shall be decided by DOE's Contracting Officer.¹²⁰

Both of these rulings were appealed to the United States Court of Appeals for the Federal Circuit, and were treated as companion cases.¹²¹ Deciding both suits simultaneously on August 31, 2000, the court ruled against DOE, allowing both sets of plaintiffs to seek damages beyond those provided in the Standard Contract.¹²² The court found that DOE had failed to perform a critical and central contractual duty by missing the January 31, 1998 deadline.¹²³ DOE's delay represented a fundamental breach of the Standard Contract, and the utilities were not constrained to follow the disputes provisions contained therein.¹²⁴

Finally, in August 1999, Wisconsin Electric filed suit with the United States Court of Appeals for the D.C. Circuit seeking monetary and non-monetary relief.¹²⁵ While the claim was similar to those brought by other utilities in Federal Claims Court, unlike those utilities, Wisconsin Electric has previously sought to resolve its dispute with DOE through the Department's Contracting Officer.¹²⁶ This suit alleged that although Wisconsin Electric had aggressively pursued administrative remedies under the Standard Contract for over a year, DOE had refused to grant the relief to which the company is entitled.¹²⁷ The D.C. Circuit Court dismissed the case for want of jurisdiction, however, stating that contract disputes with DOE must be settled by the Court of Federal Claims.¹²⁸

III. ATTEMPTED RESOLUTIONS

Taken together, the litigation brought to date against DOE suggests that ultimately the Agency could be held liable for staggering sums of money, either as a result of direct breach-of-contract claims, or for claims brought following a breakdown of administrative reme-

¹²⁰ See *id.* at 377-78.

¹²¹ See *Me. Yankee Atomic Elec. Co. v. United States*, 1999 WL 626530 (Fed. Cir. 1999).

¹²² See *Me. Yankee Atomic Elec. Co. v. United States*, 2000 WL 1230587, at *8 (Fed. Cir. 2000); *N. States Power Co. v. United States*, 2000 WL 1231054, at *8 (Fed. Cir. 2000).

¹²³ See *Me. Yankee*, 2000 WL 1230587, at *6.

¹²⁴ See *id.* at *7.

¹²⁵ See *Wisconsin Electric Sues DOE After Nuclear Talks Falter*, *INSIDE ENERGY*, Aug. 30, 1999, available in 1999 WL 12810518.

¹²⁶ See *id.*

¹²⁷ See *id.*

¹²⁸ See *Wis. Elec. Power Co. v. United States Dep't of Energy*, 211 F.3d 646, 648 (D.C. Cir. 2000).

dies.¹²⁹ Although the utilities would rather receive specific performance of the contracts requiring DOE to take possession of their stockpiled spent fuel, such an outcome is unlikely.¹³⁰ The United States Supreme Court, on March 6, 2000, declined to hear an appeal by the utilities seeking to overturn the D.C. Circuit Court of Appeals decision to not require the government to begin accepting spent nuclear fuel.¹³¹ Thus, any resolution provided by the judiciary, aside from a negotiated settlement,¹³² will be limited to financial compensation.¹³³

In part because such a resolution would both place a huge burden on the federal budget and fail to ultimately hasten the safe disposal of the spent fuel, Congress has repeatedly attempted to craft a legislative remedy.¹³⁴ In the 106th Congress, legislation has been introduced in both the Senate and the House of Representatives to create an interim storage facility at Yucca Mountain and to begin storing spent nuclear fuel there pending the likely completion of a permanent repository at that location.¹³⁵ Such a facility could expedite DOE's ability to meet its obligation to utilities under the NWPAA.¹³⁶ Although an interim storage facility would be essentially the same design as current temporary on-site facilities, proponents argue that storing the spent fuel in one centralized location is safer than having the material dispersed throughout the United States.¹³⁷ Perhaps most importantly, interim storage would alleviate the pressure on utilities that are facing the possibility of running out of storage capacity at their reactor sites.¹³⁸

Interim storage legislation—sought by the nuclear utility industry—has been strongly opposed, however, by environmental organizations, the Nevada congressional delegation, and the Clinton Admini-

¹²⁹ See *id.* Although DOE Secretary Richardson has suggested that the department is willing to take title to spent fuel kept on-site at power plants, DOE has yet to successfully negotiate any non-monetary remedies with holders of spent nuclear fuel. See *id.*

¹³⁰ See *Northern States Power I*, 128 F.3d 754, 759 (D.C. Cir. 1997).

¹³¹ See Lorie Asseo, *Court Declines Fuel Disposal Fight*, ASSOCIATED PRESS, Mar. 6, 2000, available in 2000 WL 15786653.

¹³² Secretary Richardson asserts that DOE does not currently have the authority to negotiate a settlement, and that Congress must first pass legislation allowing the Department to settle with the utilities. See *Proposal Would Have DOE Take Title to Waste if Utilities Drop Lawsuits*, ELECTRIC UTILITY WEEK, May 3, 1999, available in 1999 WL 12165446.

¹³³ See Asseo, *supra* note 131.

¹³⁴ See H.R. 45, 106th Cong. (1999); S. 608, 106th Cong. (1999); S. 1287, 106th Cong. (1999).

¹³⁵ See H.R. 45, 106th Cong. (1999); S. 608, 106th Cong. (1999).

¹³⁶ See Holt, *supra* note 28, at 6.

¹³⁷ See Upton, *supra* note 20.

¹³⁸ See *id.*

stration, and has very little chance of final passage in Congress.¹³⁹ Opponents to the legislation argue that spent fuel should not be moved to Yucca Mountain prior to a final determination of the site's suitability as a permanent repository.¹⁴⁰ Concerns remain regarding the potential for earthquakes and groundwater contamination at the site.¹⁴¹ Also, creating a temporary facility at Yucca Mountain prior to a final determination on its suitability would create the perception that a determination had been made before all the technical evaluations of the site are complete.¹⁴² Furthermore, if Yucca Mountain is ultimately found to be unsuitable as a repository, any spent fuel stored there temporarily would have to be transported twice: once to Yucca Mountain, and again to wherever a permanent repository is ultimately located.¹⁴³ Or in the event that an alternative location could not be found, a temporary facility at Yucca Mountain could become a *de facto* permanent storage facility.¹⁴⁴

An alternative to interim storage would be for DOE to take title to the spent fuel and keep it on site at the power plants pending completion of a final repository.¹⁴⁵ Energy Secretary Richardson has suggested the Administration is interested in pursuing this option.¹⁴⁶ Although the spent fuel would remain at the reactor sites, the "take title" option would relieve utilities of both the liability and costs associated with continued on-site storage.¹⁴⁷ In a compromise with the Administration, the Chairman of the Senate Energy Committee, Senator Frank Murkowski—a strong proponent of interim storage—introduced "take title" legislation in the 106th Congress.¹⁴⁸

As introduced, this legislation would have given utilities the option of dropping claims against DOE in exchange for having the Agency take title to their spent fuel as well as undertake the financial costs associated with continued on-site storage.¹⁴⁹ The legislation also

¹³⁹ See Mar. 12, 1999 House NWPB Hearing, *supra* note 19, (statement of Sec'y Bill Richardson, DOE); see also Holt, *supra* note 28, at 7.

¹⁴⁰ See Holt, *supra* note 28, at 7.

¹⁴¹ See *id.*

¹⁴² See *id.*

¹⁴³ See Rep. Jim Gibbons, *H.R. 45 Is Bad for Nevada, Environment and Nation*, ROLL CALL, Mar. 6, 2000, available at 2000 WL 8733826.

¹⁴⁴ See *id.*

¹⁴⁵ See Mar. 12, 1999 House NWPB Hearing, *supra* note 19 (statement of Sec'y Bill Richardson, DOE).

¹⁴⁶ See *id.*

¹⁴⁷ See *id.*

¹⁴⁸ See S. 1287, 106th Cong. (1999).

¹⁴⁹ See *id.*

included provisions allowing for interim storage at Yucca Mountain beginning in 2007, and restricted the Environmental Protection Agency's ability to set radiation release standards for the site.¹⁵⁰

Chairman Murkowski had included the "take title" language in the bill with the hopes of passing nuclear waste legislation that would not face a presidential veto.¹⁵¹ Ironically, Chairman Murkowski removed the "take title" provision from the bill just prior to its passage by the Senate out of a concern that the bill would not be approved by a veto-proof majority of sixty-seven votes.¹⁵² Seven northeastern governors had come out against the provision and had asked the Senators representing their states to vote against the bill, effectively dooming the legislation.¹⁵³

The governors' objections to the bill arose out of concerns that if the federal government took title to the spent fuel, there would no longer be pressure on DOE to move the waste to a permanent repository.¹⁵⁴ As a result, the governors felt the on-site waste storage facilities in their states could become *de facto* permanent depositories.¹⁵⁵ The governors' reasoning was very similar to that employed by opponents of interim storage at Yucca Mountain.¹⁵⁶

Both of the proposed temporary solutions to the spent fuel problem—"take title" legislation and interim storage—have run into strong opposition precisely because they may, in fact, not be so temporary.¹⁵⁷ Chairman Murkowski's much fought-over measure ultimately only received sixty-four votes for final passage—four votes shy of the majority needed to overcome a threatened presidential veto.¹⁵⁸ As a result, a frustrated Senator Murkowski declared the bill "dead."¹⁵⁹ Indeed, on April 25, 2000, President Clinton vetoed the bill, and

¹⁵⁰ *See id.*

¹⁵¹ *See* Tina Davis, *Revised Nuke Waste Bill Does Not Win Democratic Favor*, THE ENERGY DAILY, Feb. 10, 2000.

¹⁵² *See* Brody Mullins, *Governors Get Murkowski to Drop Nuclear Waste Provision*, NATIONAL JOURNAL'S CONGRESS DAILY, Feb. 9, 2000, available at 2000 WL 11085618.

¹⁵³ *See id.*

¹⁵⁴ *See id.*

¹⁵⁵ *See id.*

¹⁵⁶ *See id.*

¹⁵⁷ *See* Mullins, *supra* note 147.

¹⁵⁸ *See Senate Effort to Speed Up Nuclear Waste Shipments Declared Dead Until Next Year*, CO-LEY NEWS SERVICE, Feb. 10, 2000.

¹⁵⁹ *See id.*

upon reconsideration by the Senate, it failed to receive the two-thirds majority of votes necessary to override the veto.¹⁶⁰

IV. A LIKELY RESOLUTION

A. Legislative Solutions Considered by Congress

It is becoming increasingly apparent that the 106th Congress, like past Congresses, will not be able to achieve the necessary political consensus to pass into law either an interim storage or a "take title" measure. Although Energy Secretary Richardson has expressed his belief that DOE will be able to take title of the spent fuel while it remains on-site at nuclear power plants around the country,¹⁶¹ he has also made clear that DOE can not take such a step without authority from Congress.¹⁶² As a result, DOE will likely remain delinquent on its obligations under the NWPA, and the utilities that signed contracts pursuant to the NWPA will continue to press their claims against the government in court.¹⁶³

B. Judicial Solutions

Should the remedy provided by the judiciary be limited to damages—as is almost certain¹⁶⁴—the financial liability of the federal government has been projected to be as large as \$80 billion.¹⁶⁵ The federal government has already been found liable for breach of contracts made pursuant to the NWPA in *Maine Yankee Atomic Power Co. v. United*

¹⁶⁰ See generally *Me. Yankee Atomic Power v. United States*, 2000 WL 1230587 (Fed.Cir. 2000), *N. States Power Co. v. United States*, 2000 WL 1231054 (Fed. Cir. 2000).

¹⁶¹ See Dan Harrie, *Nuclear Waste, Tailings Occupy Western Governors*, SALT LAKE TRIBUNE, June 16, 1999, available at 1999 WL 3366166 (quoting Sec'y Richardson as saying at a Western Governors Conference, "DOE will take title to waste at the facilities while we look at the viability of Yucca Mountain.").

¹⁶² See *Proposal Would Have DOE Take Title to Waste if Utilities Drop Lawsuits*, ELECTRIC UTILITY WEEK, May 3, 1999, available at 1999 WL 12165446.

¹⁶³ See generally *Me. Yankee*, 2000 WL 1230587, *1.

¹⁶⁴ See *Court Declines Fuel Disposal Fight*, THE ASSOCIATED PRESS, Mar. 6, 2000, available at 2000 WL 15786653 (discussing the Supreme Court's refusal to review a lower court order limiting a damages remedy against a utility); see also *Northern States Power I*, 128 F.3d 754, 761 (D.C. Cir. 1997) (holding DOE had an unconditional obligation to accept waste, but refusing to order specific performance).

¹⁶⁵ See *Energy Secretary Hopes for Waste Pact this Session*, LAS VEGAS REVIEW-JOURNAL, Mar. 9, 2000, at 4A.

*States*¹⁶⁶ and *Northern States Power Company v. United States*,¹⁶⁷ although the amount of damages in those cases have yet to be established.¹⁶⁸

The damages estimates are so extraordinarily large because of three costly factors. First, utilities have already paid over \$15 billion into the government's Nuclear Waste Fund in return for the government's obligation to provide a permanent repository.¹⁶⁹ Absent such a repository, utilities will seek to stop being required to make additional contributions to the Nuclear Waste Fund and to recover contributions already made.¹⁷⁰ The Nuclear Energy Institute has contended that DOE's failure to begin accepting spent fuel could require the government to refund all fees paid into the fund plus two to three times that amount in interest.¹⁷¹ In order to put pressure on DOE, some state regulators have begun to consider forbidding nuclear utilities from passing the fees they pay pursuant to the NWPFA through to their customers.¹⁷² Such machinations increase the likelihood that utilities will be aggressive in recovering their costs from DOE.

Second, as long as a permanent repository does not exist, utilities will have to pay additional costs to continue storing spent fuel on-site, as well as to construct costly new storage facilities as more spent fuel is generated.¹⁷³ A 1993 study by the Electric Power Research Institute estimated that each reactor in the United States that had filled its current storage facilities would need to spend between \$700,000 and \$1.3 million per year to build additional storage capacity.¹⁷⁴ Total industry-wide costs are projected to range between \$350 million and \$650 million through 2010, and will go higher if a repository is not available by that date.¹⁷⁵

Finally, some utilities may be unable to build additional storage space and could thereby be forced to shut down and decommission nuclear power plants, resulting in significant consequential monetary damages.¹⁷⁶ State governments, concerned about having *de facto* permanent nuclear waste facilities within their boundaries because of

¹⁶⁶ See 2000 WL 1230587, *8.

¹⁶⁷ See 2000 WL 1231054, *3.

¹⁶⁸ 1999 WL 626530.

¹⁶⁹ See Kriz, *supra* note 16, at 2543.

¹⁷⁰ See Holt, *supra* note 28, at 6.

¹⁷¹ See *id.*

¹⁷² See *id.* at 3.

¹⁷³ See *id.* at 5.

¹⁷⁴ *Id.*

¹⁷⁵ See Holt, *supra* note 28, at 5.

¹⁷⁶ See *id.* at 7.

DOE's delay in opening a permanent repository, may pass laws blocking the construction of additional on-site storage facilities.¹⁷⁷ As discussed above, Northern States Power has already faced a possible shutdown of its nuclear generating plant because the utility had to seek state legislative approval in Minnesota to build additional storage space.¹⁷⁸ As state and local opposition increases, concerns about the cost of additional storage will be overtaken by concerns about the ability to build such storage at all, and thereby continue to operate the nation's nuclear plants.

The United States Court of Federal Claims, unlike the politically deadlocked Congress, is capable of resolving the first two of these issues: the recovery of funds from the Nuclear Waste Fund and the cost of continued on-site storage.¹⁷⁹ While the damages have the potential to be huge, the court has the ability to resolve the cost issues arising out of DOE's failure to meet its obligations under the Nuclear Waste Policy Act.¹⁸⁰ What is not so clear is what will result from state opposition to on-site storage in the form of laws restricting construction of additional facilities and how this will affect the ability of utilities to continue to operate their nuclear reactors, regardless of the cost of such storage.

C. Utilities' Solutions

In part because of this looming problem, utilities have pressed Congress to require DOE to provide interim storage for, or take title to, the spent fuel on-site.¹⁸¹ As discussed above, however, these options are currently not politically achievable.¹⁸²

Utilities facing state opposition to expanded on-site storage have also begun to pursue the development of private, off-site storage facilities.¹⁸³ A consortium of utilities has applied to the Nuclear Regulatory Commission for a license to build a private storage facility on the Goshute Indian reservation in Utah.¹⁸⁴ The Goshute facility faces a lengthy regulatory approval process, and strong political opposi-

¹⁷⁷ *See id.*

¹⁷⁸ *See id.*

¹⁷⁹ *See* *Yankee Atomic Elec. Co. v. United States*, 42 Fed. Cl. 223, 235 (Fed. Cl. 1998).

¹⁸⁰ *See id.*

¹⁸¹ Kriz, *supra* note 16, at 2543.

¹⁸² *See* Holt, *supra* note 26.

¹⁸³ *See* Harrie, *supra* note 153 (discussing a nuclear waste storage facility on the Goshute Indian Reservation in Utah proposed by a consortium of electric power utilities).

¹⁸⁴ *See* Holt, *supra* note 28.

tion.¹⁸⁵ As a result, continuing to keep spent fuel on-site at the reactors where it is generated is likely to be the only storage option for utilities at least through 2010.¹⁸⁶

Consequently, utilities such as Northern States Power, who have been unsuccessful in getting DOE to begin accepting waste, face an increasingly uncertain future because of the potential legislative veto that state lawmakers can wield over expanding needed on-site storage.¹⁸⁷ In effect, utilities in states like Minnesota with radioactive waste laws find themselves at the friction point between an extremely complex federal regulatory scheme fraught with delays and increasingly impatient state legislatures.¹⁸⁸ On March 3, 2000, a potential solution to this problem was provided in a lawsuit filed in United States District Court in Nevada by the Department of Justice.¹⁸⁹ In a situation with factors similar to the scenario in which some nuclear utilities are finding themselves, DOE has asked the Department of Justice to rein in a state Agency holding up the development of a nuclear waste repository.¹⁹⁰

D. Federal Preemption of State Laws

The DOE, in the course of construction at the Yucca Mountain facility in Nevada, applied to the state for water permits.¹⁹¹ The Nevada legislature, opposing the siting of a nuclear waste repository at Yucca Mountain, passed a law that prohibits the storage of radioactive waste in the state.¹⁹² Based upon that law, the Nevada State Engineer denied DOE the required water permits.¹⁹³ The Justice Department is appealing the engineer's decision in United States District Court on the grounds that the Nevada state law is preempted by the federal Nuclear Waste Policy Act.¹⁹⁴

¹⁸⁵ See *id.*; Harrie, *supra* note 153, at D2; see also Kriz, *supra* note 16, at 2543.

¹⁸⁶ See *id.*

¹⁸⁷ See Holt, *supra* note 28.

¹⁸⁸ See *id.*

¹⁸⁹ See *DOE Challenging Nevada Law Barring Nuclear Waste Disposal*, THE ENERGY DAILY, Mar. 13, 2000.

¹⁹⁰ See *id.*

¹⁹¹ See *id.*

¹⁹² See *id.* As is discussed *infra*, this law has already been litigated in *Nevada v. Watkins*, 914 F.2d 1545 (9th Cir. 1990). In that case, the court ultimately reached its decision based upon the Property Clause of the Constitution, not the Supremacy Clause, whereas in the current case it appears the government is basing its appeal on the NWPA's preemption of the Nevada law. See *DOE Challenging Nevada Law*, THE ENERGY DAILY, Mar. 13, 2000.

¹⁹³ See *id.*

¹⁹⁴ See *id.*

The doctrine of preemption comes from the Supremacy Clause, found in Article VI, clause 2 of the Constitution, which elevates federal law above that of the states.¹⁹⁵ Any inquiry into federal preemption must initially determine whether Congress has acted pursuant to the powers delegated to it by the Constitution, as opposed to those powers reserved to the states by the Tenth Amendment.¹⁹⁶ Once Congress' authority to regulate in a given area is established, the question is whether Congress exercised its power in such a manner as to exclude states from exercising concurrent jurisdiction over the same subject matter.¹⁹⁷ This inquiry involves asking first whether compliance with both federal and state law is a physical impossibility.¹⁹⁸ If so, the state law is excluded.¹⁹⁹ Second, if such compliance is not impossible, but Congress has unequivocally and expressly declared that its authority shall be exclusive, then states can not simultaneously exert authority over the subject matter.²⁰⁰ Third, where Congress has not expressly prohibited dual regulation or declared its exclusionary exercise of authority over the subject matter, federal preemption may be implied in two general ways.²⁰¹ Where the federal regulatory scheme is so pervasive as to occupy a given field, then any state law falling within the field is preempted.²⁰² Also, where the state law stands as an obstacle to the accomplishment of the full purposes and objectives of Congress, then the federal regulation is exclusive.²⁰³

It has long been established that Congress has the constitutionally-delegated authority to regulate over the entire spectrum of nuclear energy.²⁰⁴ Early on in the commercialization of nuclear energy, Congress found that federal regulation was necessary and appropriate under the constitutionally-granted powers over the common defense and security, interstate commerce, and promotion of the general welfare.²⁰⁵ Upon relinquishing monopolistic government control over nuclear energy to commercial utilities, Congress established federal

¹⁹⁵ *N. States Power Co. v. Minn.*, 447 F.2d 1143, 1145 (8th Cir. 1971).

¹⁹⁶ *Id.* at 1146.

¹⁹⁷ *Id.*

¹⁹⁸ *Id.*

¹⁹⁹ *See id.*

²⁰⁰ *N. States Power Co. v. Minn.*, 447 F.2d at 1146.

²⁰¹ *See Nev. v. Watkins*, 914 F.2d 1545, 1560 (9th Cir. 1990) (quoting *Silkwood v. Kerr-McGee Corp.*, 464 U.S. 238, 247 (1984)).

²⁰² *Id.*

²⁰³ *Id.*

²⁰⁴ *See N. States Power v. Minn.*, 447 F.2d at 1147.

²⁰⁵ *Id.*

regulation by creating a comprehensive licensing scheme administered by the Atomic Energy Commission, now the Nuclear Regulatory Commission.²⁰⁶ That licensing system controlled the production of nuclear power and the use of nuclear source and by-product materials.²⁰⁷ Because of the extensive federal regulation of the field, the United States Court of Appeals for the Eighth Circuit found in *Northern States Power Co. v. Minnesota* that the federal government has exclusive authority under the doctrine of preemption to regulate the construction, operation, and discharge of radioactive effluents of nuclear power plants.²⁰⁸

This holding was subsequently limited somewhat by *Pacific Gas & Electric Co. v. State Energy Resources Conservation & Development Commission*, decided by the Supreme Court in 1983.²⁰⁹ In that case, the California State Energy Resources Commission, which had authority over the generation and sale of electricity in the state, was responsible for enforcing a state law that conditioned the construction of nuclear plants on having a means of disposal for nuclear waste.²¹⁰ Essentially, the law imposed a moratorium on the development of new nuclear plants in the state until the Commission found that a permanent solution to disposing of spent fuel rods had been developed and approved by the federal government.²¹¹ Petitioner Pacific Gas and Electric asserted that the state law was invalid under the Supremacy Clause of the United States Constitution because it was preempted by the Atomic Energy Act that governed the commercial development of nuclear power.²¹²

The Court began its analysis by finding that the Atomic Energy Act did not expressly prohibit a state from deciding not to permit the

²⁰⁶ See *id.* at 1148.

²⁰⁷ *Id.*

²⁰⁸ *Id.* at 1154. The "radioactive effluents" referred to in *Northern States Power v. Minnesota* were not spent-fuel rods but rather radioactive liquid and gaseous discharges. *Id.* at 1145. Northern States Power had been permitted by the United States Atomic Energy Commission to construct and operate a nuclear power plant. When the utility applied to the Minnesota Pollution Control Agency for a waste disposal permit, however, the permit was granted subject to substantially more stringent standards than those imposed by federal law. See *id.* at 1144-45. The court found that discharge of radioactive effluents was inextricably intertwined with the construction and operation of the facility, and were states allowed to individually regulate such releases, they could stifle the development of the nuclear power industry. Thereby, the states could create an obstacle to the accomplishment and execution of the full purposes and objectives of Congress. See *id.* at 1154.

²⁰⁹ 461 U.S. 190 (1983).

²¹⁰ See *id.* at 194.

²¹¹ See *id.* at 198.

²¹² *Id.*

construction of a nuclear plant.²¹³ The Court also discerned that there are two distinct aspects of the nuclear waste issue: safety and economics.²¹⁴ Although it was clear that the federal regulations occupied the entire field of nuclear safety, the Court found that the State of California could pass laws addressing the economic aspects of nuclear power.²¹⁵ The risk existed that, due to the lack of interim storage space or a permanent disposal method for spent fuel, a nuclear plant could be forced to shut down.²¹⁶ The California Commission, in exercising its traditional state responsibility in the field of regulating utilities for determining questions of need, reliability, and cost, could legitimately address the nuclear waste issue inasmuch as it affected the predictability and economics of electricity generation.²¹⁷

In a footnote to the opinion, the Court distinguished the California law from Minnesota's efforts in *Northern States Power v. Minnesota*²¹⁸ to regulate waste discharge issues surrounding nuclear plants.²¹⁹ In Minnesota, the contested regulation fell squarely within the field of safety regulation reserved for federal regulation.²²⁰ Further, although the Court acknowledged that just prior to rendering its decision in *Pacific Gas & Electric*, Congress passed the Nuclear Waste Policy Act—thereby providing a complex federal scheme for disposing of nuclear waste, in the view of the Court the question of economic feasibility was not preempted by federal law and remained for the states to decide.²²¹

The issue of whether the NWPA preempted all state laws restricting nuclear waste disposal was revisited but not resolved in *Nevada v. Watkins*.²²² In that case, the Nevada legislature passed a law prohibiting the federal government from establishing a nuclear waste repository at Yucca Mountain without the state legislature's approval.²²³ The legislature then went further and made it illegal for any person or governmental entity to store high-level waste in Nevada.²²⁴ These laws

²¹³ See *id.* at 205.

²¹⁴ See *Pacific Gas & Elec. Co.*, 461 U.S. at 196–97.

²¹⁵ See *id.* at 205.

²¹⁶ See *id.* at 196–97.

²¹⁷ See *id.* at 205.

²¹⁸ 447 F.2d 1143 (8th Cir. 1971), *aff'd* 405 U.S. 1035 (1972).

²¹⁹ See *Pacific Gas & Elec. Co.*, 461 U.S. at 212, n.24.

²²⁰ *Id.*

²²¹ See *id.* at 219.

²²² See 914 F.2d 1545, 1561 (9th Cir. 1990).

²²³ See *id.* at 1550–51.

²²⁴ See *id.* at 1551.

were passed in response to amendments to the NWPA in 1987 that designated Yucca Mountain as the sole sight of consideration for a federal high-level nuclear waste repository.²²⁵ The Federal Circuit Court ruled against Nevada, allowing DOE to proceed with its site consideration; however, it did so based upon the Property Clause of the Constitution²²⁶ and it did not reach the question of whether the NWPA completely occupied the field of nuclear waste regulation.²²⁷

This string of cases does not provide a definitive answer as to whether a state law that prevents a utility from building additional on-site storage pending completion of a federal repository would be preempted by the NWPA.²²⁸ Prior to constructing additional storage facilities, a utility must get a license from the Nuclear Regulatory Commission, which clearly brings the issue within the sphere of federal regulation and suggests that federal law excludes state restrictions on waste storage.²²⁹

The outcome is not clear, however, if a state parsed its law in economic terms—restricting the construction of new temporary storage out of a concern that a public utility would incur uneconomical, additional costs as a result of having to provide potentially unlimited “temporary” storage for its spent fuel.²³⁰ Such a law would closely resemble the state law that was upheld by the Supreme Court in *Pacific Gas & Electric*.²³¹ Restricting the ability of a currently-licensed and operating nuclear plant to continue generating power, however, is directly counter to the holding in *Northern States Power v. Minnesota*.²³² Further, even in *Pacific Gas & Electric*, the case that limited the holding of *Northern States Power v. Minnesota*, dicta suggests that the Court

²²⁵ See *id.* at 1550.

²²⁶ The Yucca Mountain site is on federal lands. Congress retains the power to enact legislation effecting federal lands pursuant to the Property Clause, and when Congress so acts, the federal legislation necessarily overrides conflicting state laws under the Supremacy Clause. See *id.* at 1554.

²²⁷ See *id.* at 1561.

²²⁸ See Holt, *supra* note 28.

²²⁹ See *Minn. v. United States Nuclear Regulatory Comm’n*, 602 F.2d 412, 414 (D.C. Cir. 1979). The Nuclear Regulatory Commission (NRC) has a general license for on-site dry storage that allows any nuclear power plant to install NRC-approved dry storage systems without further formal NRC approval. See also Holt, *supra* note 28.

²³⁰ See *id.*

²³¹ See *Pacific Gas & Elec.*, 461 U.S. at 197–98.

²³² “[W]e hold that the federal government has exclusive authority under the doctrine of pre-emption to regulate the construction and operation of nuclear plants, which necessarily includes regulation of the levels of radioactive effluents discharged from the plant.” 447 F.2d at 1154.

saw the NWPA as occupying the entire field of nuclear waste issues arising from currently operating reactors.²³³

The Northern States Power Company has never challenged the Minnesota Radioactive Waste Management Act on constitutional grounds.²³⁴ Although the above analysis suggests the utility would likely be successful, it has accepted the law's authority and sought legislative approval for construction of additional on-site storage.²³⁵ This may be in part due to the fact that the utility would not want to upset the relationship it has with the state legislature or the state public utility commission—a regulatory body which oversees many of the utility's operations and sets the rates it may charge customers.²³⁶ So long as the commission has such authority over the utility, it is likely that the law will go unchallenged. While the utility has been successful so far in obtaining approval to expand its storage capacity, going to the legislature is an uncertain and expensive process, and is likely to become more so as DOE continues to refuse to accept spent fuel from the utility.²³⁷

V. A NEW LEGISLATIVE APPROACH

In response to increasing state opposition to construction of on-site, interim storage facilities²³⁸ and the refusal of the courts to order DOE to begin accepting spent fuel from the utilities,²³⁹ an as yet untried legislative fix is likely to be proposed. Assuming utilities are able to recover the costs of continued on-site storage through the Court of Federal Claims,²⁴⁰ the most pressing problem facing the nuclear power industry will likely be the imminent forced shutdown of nuclear reactors as they run out of storage space for their spent fuel.²⁴¹ So far, centralized interim storage and "take title" legislation—two

²³³ "[I]t is certainly possible to interpret the Act as directed at solving the nuclear waste disposal problem for existing reactors without necessarily encouraging or requiring that future plant construction be undertaken." 461 U.S. at 220.

²³⁴ See Holt, *supra* note 28.

²³⁵ See *In re Application of N. States Power Co. for Approval of Its 1998 Resource Plan*, 604 N.W.2d 386, 387–88 (2000).

²³⁶ See generally, MINN. STAT. § 216B (1999).

²³⁷ See Kriz, *supra* note 16, at 2543; Holt, *supra* note 28.

²³⁸ See Kriz, *supra* note 16, at 2543 (stating that seven nuclear facilities are limited by regulations in the amount of waste they can store on-site).

²³⁹ See *N. States Power Co. v. United States Dep't of Energy*, 128 F.3d 754, 755 (D.C. Cir. 1997).

²⁴⁰ See *Yankee Atomic Elec. Co. v. United States*, 42 Fed. Cl. 223, 225 (Fed. Cl. 1998).

²⁴¹ See Holt, *supra* note 28; Kriz, *supra* note 16, at 2543.

potential solutions to this problem—have yet to garner the necessary political consensus to become law.²⁴² As a result, the industry or specific individual utilities are likely to attempt a new solution and push for narrowly tailored legislation that would unequivocally and expressly establish the federal government's exclusive authority over the construction of nuclear waste storage facilities.

The effect of such "exclusive authority" legislation would be to preempt state laws restricting the construction of needed, additional on-site storage.²⁴³ It is well-established that within constitutional limits Congress may preempt state authority by so stating in express terms.²⁴⁴ The constitutional authority of Congress to regulate over the entire spectrum of nuclear energy has long been established.²⁴⁵ States may currently regulate the nuclear power industry within a limited sphere of traditional state responsibility—out of economic concerns, for example.²⁴⁶ The Supreme Court has made clear, however, that Congress may limit the states' ability to regulate nuclear energy altogether if the exercise of such power by the states undercuts a federal objective.²⁴⁷

Following enactment of "exclusive authority" legislation, the federal government—the party responsible for creating the need for additional on-site storage—would have unitary authority to allow the construction of additional on-site storage facilities. Utilities would be no longer be stuck between the federal government's delay and state governments' impatience. Utilities would remain responsible for interim, on-site storage, and thus would presumably continue to push the federal government to meet its obligation to complete a permanent waste repository.²⁴⁸ The companies would not, however, face the eminent shutdown of their reactors because of state opposition to the construction of new spent-fuel storage facilities.²⁴⁹ By making it possible for utilities to continue to operate their reactors, the government

²⁴² See Dori Meinert, *Senate Effort to Speed Up Nuclear Waste Shipments Declared Dead 'til Next Year*, COPLEYS NEWS SERVICE, Feb. 10, 2000.

²⁴³ See *Pacific Gas & Elec. Co.*, 461 U.S. at 203.

²⁴⁴ *Id.*

²⁴⁵ *N. States Power v. Minn.*, 447 F.2d at 1147.

²⁴⁶ See *Pacific Gas & Elec. Co.*, 461 U.S. at 223.

²⁴⁷ See *id.*

²⁴⁸ See Nuclear Waste Policy Act, 42 U.S.C. § 10131(a)(5) (giving generators of high-level waste primary responsibility to provide for, and responsibility to pay the costs of, the interim storage of such waste and spent fuel until it is accepted by the Secretary of Energy in accordance with the NWPAA).

²⁴⁹ See Holt, *supra* note 28 (discussing how successful state and local opposition to expanding on-site storage could force reactors to shut down).

could limit its liability for consequential damages that might otherwise result from the government's failure to meet its obligations under the NWPA in a timely manner.

Certainly, states would resent having their regulatory authority in the field reduced and may oppose "exclusive authority" legislation. Unlike interim storage legislation, however, it would not require premature shipping of spent fuel to Yucca Mountain, which has thus far proven to be politically unachievable.²⁵⁰ Further, unlike "take title" legislation, it would not eliminate utilities' incentive to continue to press DOE to complete a permanent repository, which is the primary concern governors have if utilities are no longer responsible for the waste.²⁵¹

CONCLUSION

The nuclear waste problem would not ultimately be solved by "exclusive authority" legislation, but such legislation would prevent the problem from being further exasperated. The legislation would allow electric utilities to construct needed on-site storage for spent nuclear fuel and to continue to operate their reactors. The federal government would remain liable for costs incurred by the utilities as a result of DOE's failure to meet the NWPA's 1998 deadline. The government would avoid, however, the consequential damages that may result if reactors are forced to prematurely shut down because of state opposition to additional storage.

²⁵⁰ See Dori Meinert, *Senate Effort to Speed Up Waste Shipments Declared Dead 'til Next Year*, Copley News Service, Feb. 10, 1999.

²⁵¹ See Ann Scott Tyson, *Congress, Finally, May Act on Nuclear Waste*, CHRISTIAN SCIENCE MONITOR, Feb. 10, 2000, at 3.